Role of AI in Prediction of Customer Repurchasing in Online Shopping

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Abstract

Marketing, operations research, statistics, and computer science all have a strong interest in predicting client repurchase likelihood and frequency. Online shopping is one of the most useful form of e-commerce which allows consumers to directly buy products or services from a seller over the internet using a web browser or app.Shopping was an activity of visiting places where goods and products are sold in order to look at and buy things. But nowadays due to the advancement of technology people tend buy products and services through online.Furthermore, the COVID-19 pandemic accelerated the adoption of online shopping, underscoring its resilience and adaptability. Online shopping has become an integral part of modern consumer behavior, reshaping the retail landscape.This research provides the multifaceted aspects of online shopping, consumer preferences, and the impact of emerging technologies. Predicting consumer repurchase propensity and frequency in fiercely competitive consumer marketplaces has drawn significant study attention from marketing, operations research, statistics, and computer science. Utilizing a mixed-methods approach, we conducted surveys, analyzed e-commerce trends, and reviewed existing literature to provide a comprehensive overview. To measure the customer satisfaction and loyalty of online shoppers survey where conducted and made a conclusion. The study, focus on overall online shopping experience of the consumers. This research contributes to the study of online shopping customer's satisfaction and loyalty to customers, and identifies the factors that might, influence the customer, while doing online shopping. We also investigate the challenges associated with online shopping, including security concerns, privacy issues, and the environmental impact of packaging and shipping and predicted the repurchase of the customer based on the survey.

Introduction

Online Shopping

Today, people are living in the digital environment.In the modern world, the internet plays a very superficial role in the life of humans begins. It builds a limited amount of transactions all over the

world [1]. Online shopping is one of the most widely used words in the business world. It is very common in developing and developed countries.Online shopping is the process of purchasing goods directly from a seller without any intermediary, or it can be referred to as the activity of buying and selling goods over the internet. Online shopping deals provide the customer with a variety of products and services, wherein customers can compare them with deals of other intermediaries also and choose one of the best deals for them. This multidisciplinary field investigates how people shop online, what factors influence their decisions, the evolution of online retail platforms, and the challenges and opportunities for both retailers and consumers in the ever-changing landscape of digital commerce. Researchers in this field aim to provide insights into optimizing the online shopping experience, enhancing security, and understanding the economic and social implications of this rapidly growing industry. Shoppers can browse and make purchases 24/7 from the comfort of their homes or wherever they have an internet connection, eliminating the need to travel to physical stores. Online retailers often offer a wider range of products, sizes, colours, and brands than brick-and-mortar stores. Shoppers can easily compare options and find unique items. Online shopping saves time that would otherwise be spent driving to stores, searching for items, and waiting in checkout lines. Overall, online shopping offers convenience, choice, and cost-saving opportunities that make it a preferred method of shopping for many consumers. In 2016 about 310 million people bought 136 billion goods from Amazon which is the leading online platform for product purchasing [2].

Proposed Method

The sequential explanatory design was employed in this study to gain a broader and more in depth understanding of online buyers, satisfaction of the buyers, issues they faced by the buyers, discounts, frequency of their shopping in online and the quality of the products. Questionnaires were used to collect data for this study. The questionnaire was designed to mainly address the quantitative phase of the study. There are 20 questionnaire are given to the participants. Totally 206 participants participated in this survey and the data is used for analysis.Create customer profiles based on transaction history and viewing the page of customers where the user act in real-time can be happened and enhanced the customer likelihood by using two clustering schemes [3]. Another customer clickstream data gathered for analysis [4].

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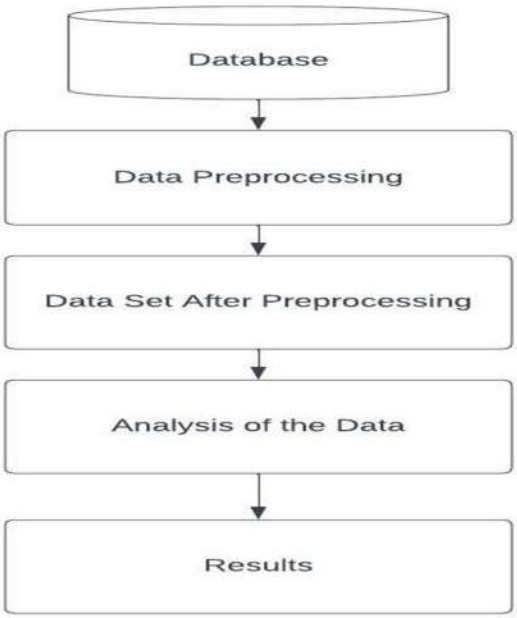

Figure 1: Architecture Diagram of the Proposed System

Specifically, we observe a customer's purchase pattern in terms of the number of periods for possible purchases and their satisfaction. Based on the satisfaction of the product by the customer the analysis of repurchasing is predicted. Initially data is collected through the questionnaires and stored in the database. Then the several data pre-processing techniques are used to preprocess data. After Preprocessing the data is analyzed using various clustering and classification algorithms. The Results of the study is then analyzed.So we use a different technique to predicted that a customer buys a product or not for this we use a recommendation system which finds the intention of new consumer and creates a recommendation of goods to the user accordingly [5].J48 Decision Tree: It performs classification to build a tree-like structure [6]. By using this algorithm, we split out data into small subsets in every step and also write rules of breakdown.Consumers are listed on the base of their style, act, and attitude on the online market website by Moe, Wendy W [7].

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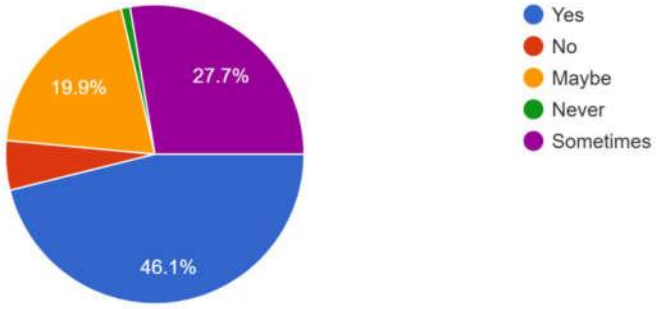
The Results of the Questionnaires as follows

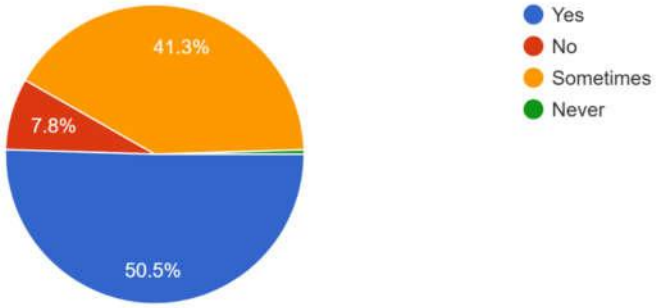
1. "Were you satisfied with the overall experience in online shopping?"

206 responses



2. "Was the eCommerce website easy to navigate?"

206 responses



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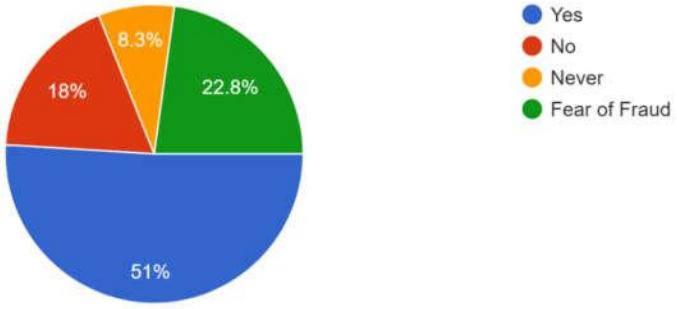
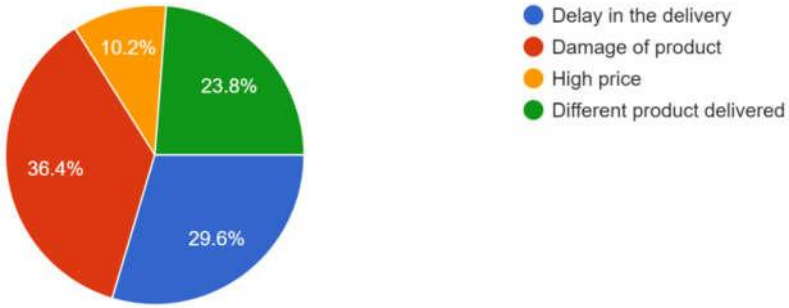
3. "Are you comfortable making payments online?"

206 responses



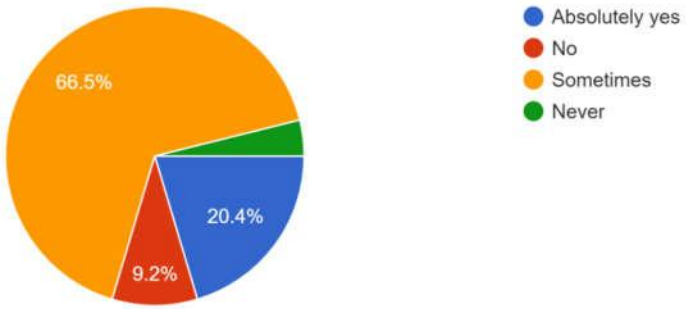
4. "What issues did you face when shopping online on website?"

206 responses



5. "Do you feel safe shopping online?"

206 responses



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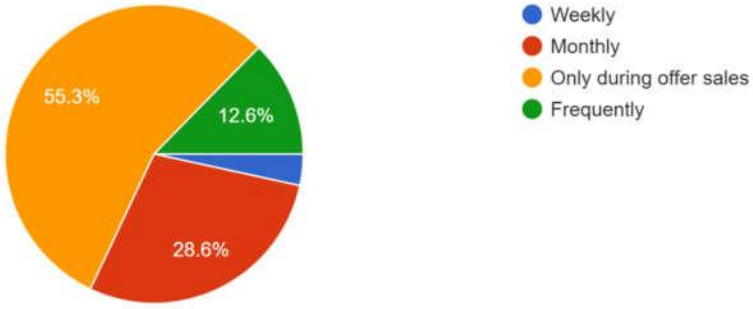
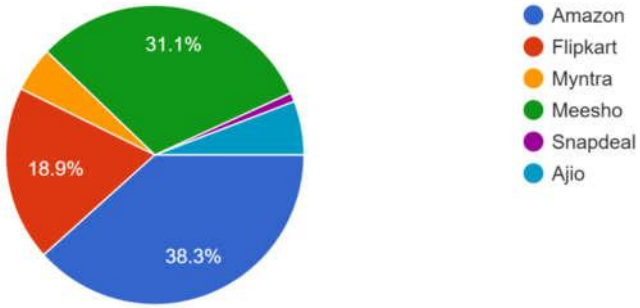
6. How often do you shop online?

206 responses



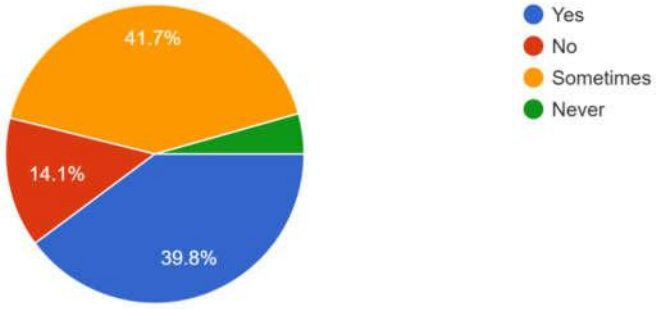
7. What's the best website for shopping online?

206 responses



8.Have you ever saved money by buying online?

206 responses



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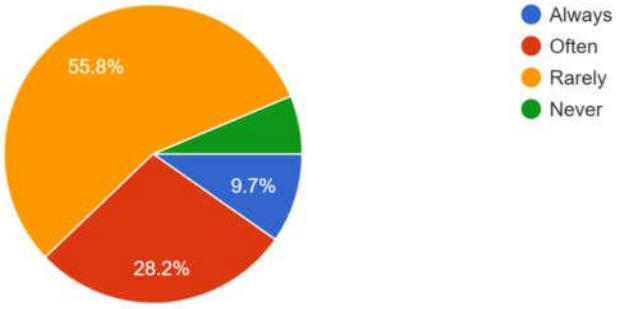
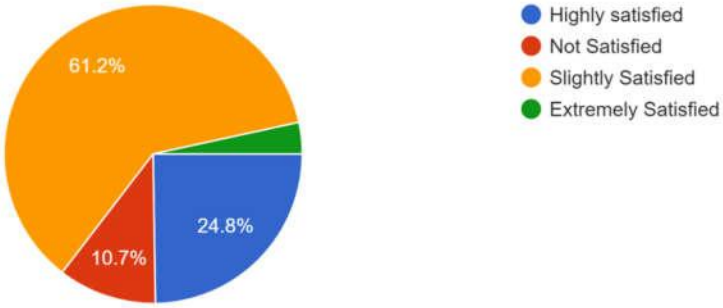
9. How often you get discount while shopping online?

206 responses



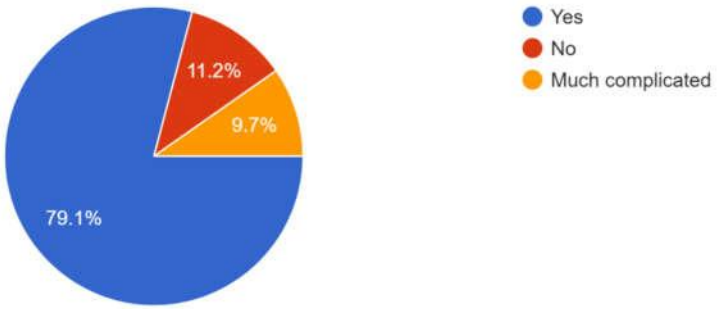
10. How satisfied are you with the quality of products purchased online?

206 responses



11. Are websites for online shopping easy to use?

206 responses



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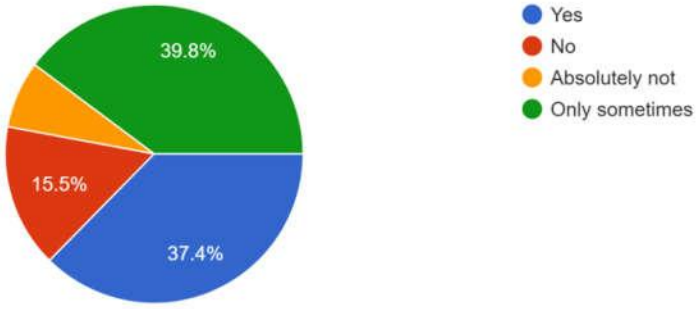
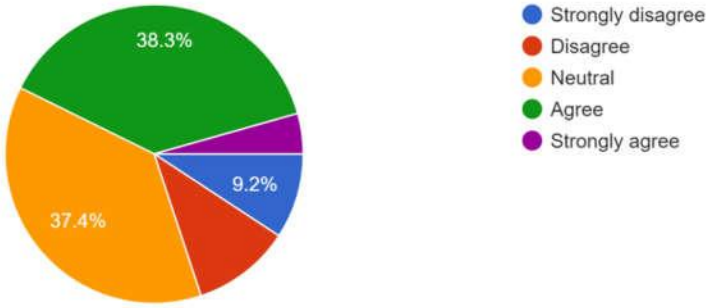
12. Do you get better prices with coupons/discounts?

206 responses



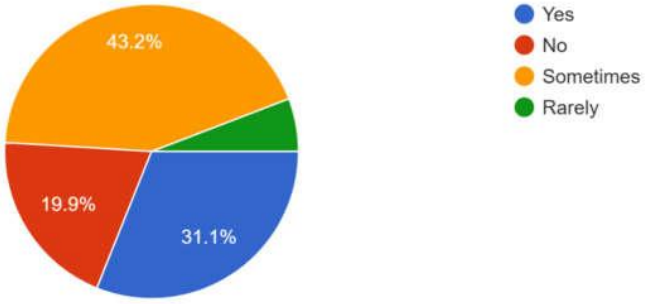
13. Are you giving huge selections and varieties of products in online shopping?

206 responses



14. Does it gives satisfaction and convenience of not going to stores?

206 responses



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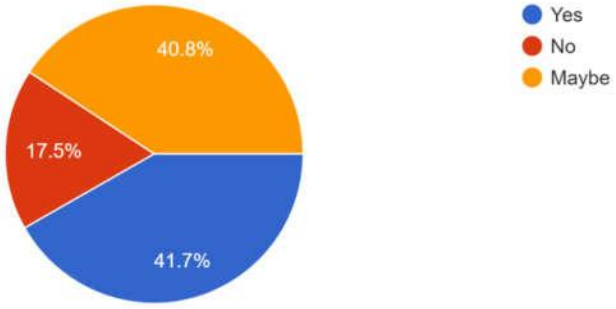
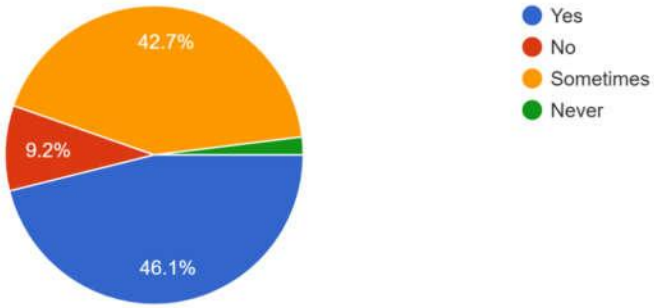
15. Do you avail with quick and easy product replacement and refund?

206 responses



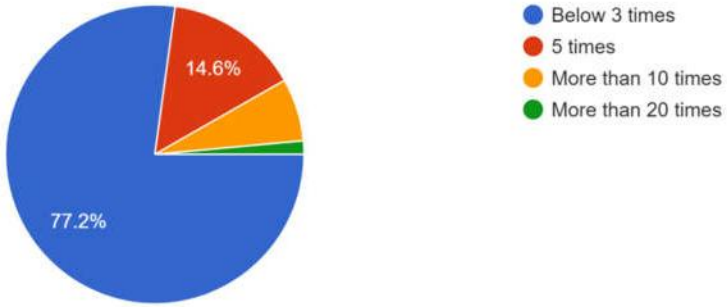
16. Do you easily find rare products online?

206 responses



17. How many times will you shop online in a month?

206 responses



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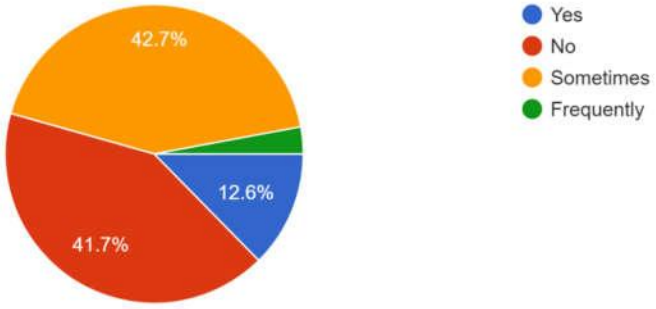
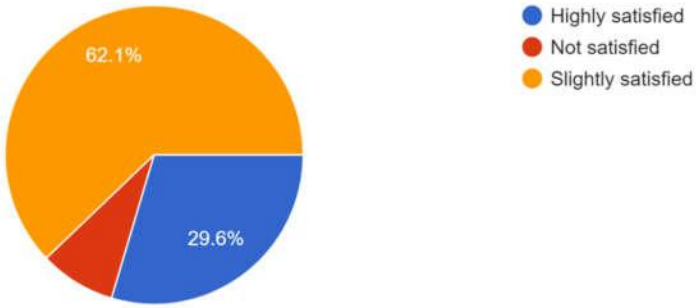
18. Have you ever dodged by online shopping?

206 responses



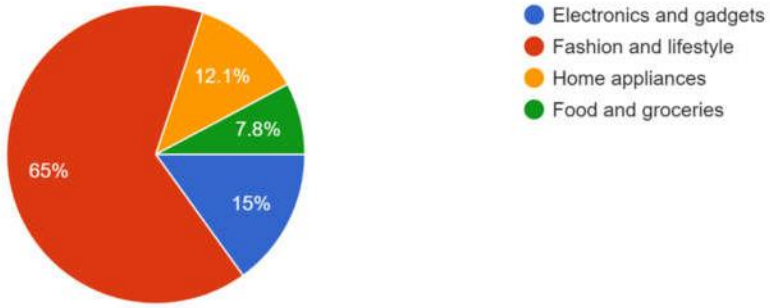
19. Overall satisfaction through online shopping?

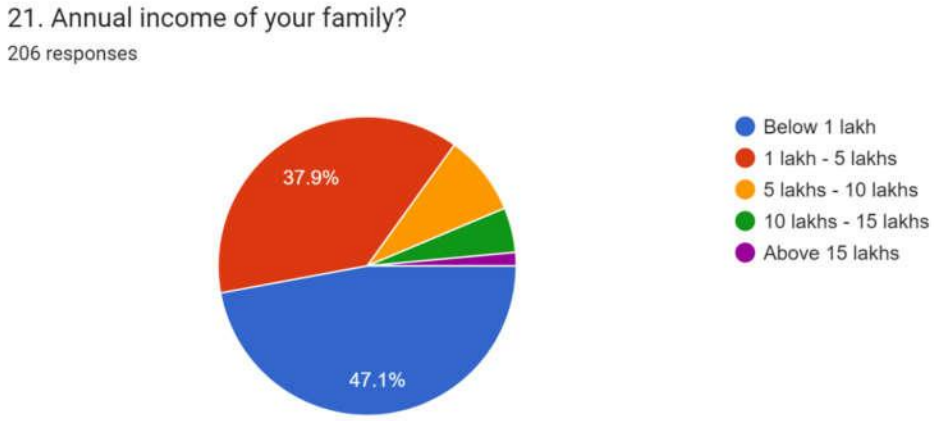
206 responses

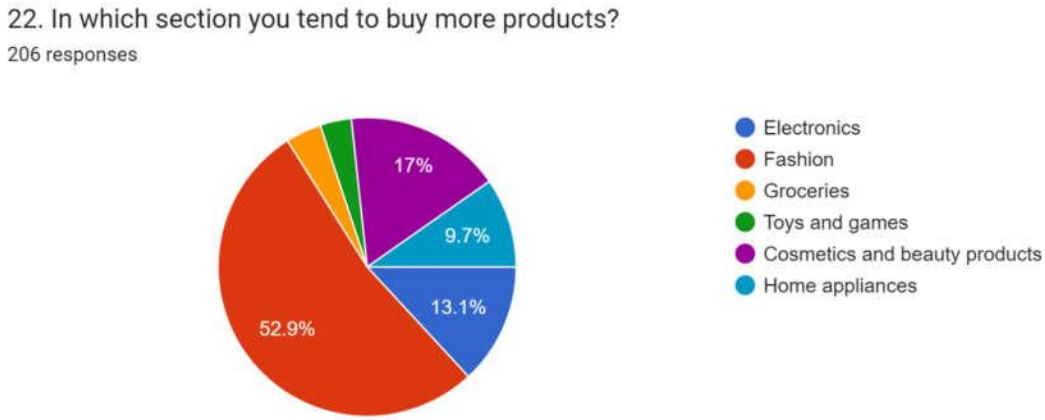


20. Need more of products and variety in which sector?

206 responses







Conclusion

AI uses a variety of methods and tools to evaluate data and project future behaviors, which is critical in forecasting the repurchasing behavior of customers during their online buying experiences. AI algorithms look for patterns and trends in historical purchasing data. This covers how often you buy, what kinds of things you buy, and when you buy them. With the help of AI, marketing tactics and predictions may be more precisely tailored to individual clients by analyzing their behavior, preferences, and purchasing histories. To estimate the chance that a client would make a repeat purchase, artificial intelligence (AI) uses machine learning models such as logistic regression, decision trees, and neural networks. By using historical data, these models are able to predict future behavior with high accuracy. AI determines which consumers are most likely to churn—to cease making purchases—and which are most likely to come back. This is beneficial.

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